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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,856	02/09/2004	Christopher F. Gallmeyer	99-647.1	9490

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EXAMINER	
LEE, CLOUD K	

ART UNIT	PAPER NUMBER
3753	

MAIL DATE	DELIVERY MODE
12/14/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/774,856	GALLMEYER ET AL.	
	Examiner	Art Unit	
	Cloud K. Lee	3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 September 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-22 and 27-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-22 and 27-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 13-17 are 27-32 are rejected under 35 U.S.C. 102(e) or 102(a) as being anticipated by Crofts et al (US Patent No. 6,253,736).

Crofts et al disclose a valve member comprising a piezoelectric device (52), an actuator control circuit (58) in electrical communication with the piezoelectric device (see figure 1) and including a connector (71) applies a control signal to the actuator, a contact surface (the end surface of 20), wherein the member is operable to move relative to the contact surface and to contact the contact surface, and a detection circuit (42) to electrically connect the connector to

the actuator control circuit, and operable to detect an electrical change in the connector of the actuator control circuit due to the member impacting the contact surface (see Col 6 lines 6-12 and figures 5a-c). Crofts et al also disclose the detection circuit includes means for detecting a voltage change in the actuator control circuit that exceeds a predetermined magnitude (see Col 6 lines 6-12 and Col 7 lines 21-25), wherein the contact surface is a valve seat, wherein the detection system is part of a control system that includes a velocity control circuit in electrical communication with the actuator control circuit and seat detection circuit, wherein the velocity control circuit provides an input to the actuator control circuit to control an impact velocity of the member with the contact surface via a control signal to the actuator (see Col 5 lines 52-57), a position control circuit (70, see Col 8 lines 37-43) in electrical communication with the actuator control circuit, the seat detection circuit, and the velocity control circuit.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 18-22 and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crofts et al (US Patent No. 6,253,736) in view of Irokawa et al. (US Patent Number 6,148,837).

Crofts et al fail to disclose the control system controlling velocity and position with the, control loop determines a charge error as a function of the stored charge value and the current charge value, a position control circuit having a stored charge value and current charge value. Irokawa et al. disclose a control system used in a similar valve that determines both speed and position with the control loop compares a stored charge value and a current charge value and an integrator (210). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the control system determines a charge error as a function of the stored charge value and the current charge value of Irokawa et al. with the valve of Sims et al. in order to provide a control system that can change between a PD (position) control mode and a PID (position and velocity) compares the stored charge value and the current charge value to eliminate overshoot or an oscillation as taught by Irokawa et al.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re*

Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 13, 14, and 17 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 2 of U.S. Patent No. 6,285,115 in view of Crofts et al (US Patent No. 6,253,736).

Claim 2 of '115 fails to disclose an explicit recitation to a seat detection circuit (however, a position control circuit could be considered to encompass a seat detection circuit because the seated position is a position detected by the seat detection circuit). Crofts et al disclose a seat detection circuit used in a similar apparatus. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the seat detection circuit of Sims et al. with the device of claim 2 of '115 in order to detect the seated position of the valve.

7. Claims 13-22 and 27-35 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 2 of U.S. Patent No. 6,285,115 in view of Crofts et al and Irokawa et al.

Claim 2 of '115 fails to disclose an explicit recitation to a seat detection circuit (however, a position control circuit could be considered to encompass a seat detection circuit because the seated position is a position detected by the seat detection circuit). Crofts et al disclose a seat

detection circuit used in a similar apparatus. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the seat detection circuit of Sims et al. with the device of claim 2 of '115 in order to detect the seated position of the valve.

The modified claim 2 of '115 fails to disclose all the details to the control system controlling velocity and position with the control loop. Irokawa et al. disclose a control system used in a similar valve that determines both speed and position with the control loop determines a charge error as a function of the stored charge value and the current charge valve and comparing the actual and the desired parameters. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the control system of Irokawa et al. with the system of the modified claim 2 of '115 in order to provide a control system that can change between a PD (position) control mode and a PID (position and velocity) control mode to eliminate overshoot or an oscillation as taught by Irokawa et al.

Response to Arguments

8. Applicant's arguments with respect to claim 9/14/07 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cloud K. Lee whose telephone number is (571)272-7206. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Huson can be reached on (571)272-4887. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CL

Ramesh Krishnamurthy

RAMESH KIRSHNAMURTHY
PRIMARY EXAMINER